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Northern Novelties for 1923

Some New Fruits, Shrubs, Trees,
Alfalfas and a Table Cereal

Printed January 10, 1923

Department of Horticulture, South Dakota State
College of Agriculture and Mechanic Arts
BROOKINGS



KOLA CRAB



SHOKO CRAB



ZAPTA CRAB

Introduction by Dr. N. E. Hansen

This list offers what is ready from my twenty-eighth year of experiments in originating new fruits at this Station. Much more remains to be done. Many more varieties worthy of trial are coming on. To the many friends who have followed the progress of the experiments with such cordial interest and have helped by sending in orders, I extend my hearty thanks. A work of tremendous magnitude and importance is being done with very limited means. The money received from the sale of plants makes possible the fruit-breeding work on a larger scale than would otherwise be possible.

Many of these new varieties are offered only once or twice as there is not enough land for nursery propagation. The available stock is so limited that only by early orders are you sure of getting what you want. So please order promptly.

Anoka Apple

First introduced spring 1918 before fruiting as South Dakota No. 2. Now given the name Anoka, a Sioux Indian word meaning "on both sides." It is a seedling of Mercer (Fluke) wild crab top-grafted on Duchess. This tree has borne heavily in 1918 and 1919. The fruit is two and one-half inches in diameter, round, Duchess type of coloring. Flesh white, good subacid. Season September. I am pleased with the early and heavy bearing of this variety under propagation.

In the spring of 1920 four trees of Anoka apple, one year buds on seedlings of Red Siberian Crab, were sent to the Experiment Station at Fargo North Dakota. Under date of December 2, 1922, Professor A. F. Yeager, Agricultural College, Fargo, North Dakota, reports on these trees as follows: "This spring two of the four trees blossomed, one produced 23 apples, the other 26. Practically all the fruit was set from lateral buds. Upon examination this fall it seems that all four of the Anoka apple trees have a lot of lateral fruit buds showing. The trees are not yet as high as one's head and were scarcely four feet high last spring. They began ripening about the 15th of August. The apples are medium to above medium in size, but somewhat larger than Duchess. They are oblong in character. Our specimens showed very little color. The flavor seemed to be very similar to Duchess. If the variety continues to flourish as it has so far it should be a big addition to our fruit list."

Price of trees, one year buds on Yellow Siberian crab stock, each \$1.00.

Taming The American Wild Crab Apple

The wild crab apple was the only apple known to the Indians before the white man brought over the cultivated apple which is a native of the temperate regions of Europe and Asia. The Indians cached or buried the fruit outdoors in the earth over winter. This served to tone down the astringency.

My chief hope in growing many thousands of apple and crab apple seedlings has been to tame the wild American crab apple enough so that the fruit would be desirable at least for culinary use. In the seedling plantations of this station the wild crab apple from Elk River, some forty miles northwest of Minneapolis, Minnesota, has proved hardy, productive and practically immune to blight. The abundant fragrant pink and white blossoms in the spring make the trees of great value for lawn and park planting, while the fruit is too sour and astringent to tempt anyone. However, the fruit will keep at least a year and is useful to impart a quince-like flavor to common apple sauce. In fact, some people consider wild American apples a fair substitute for quinces in making preserves.

While the following four varieties are by no means perfect, they are worthy of attention. They are worthy of planting purely for ornamental purposes. In the language of the orator we stand at the threshold of a new era. I have my lasso over the broncho's neck but he is not yet fully tamed. Soon I trust he will be eating right out of my hand. I believe these crab apples will prove hardy far north into Manitoba and will keep well into spring in an ordinary cellar. In the standard fruit lists for the northern limits of apple culture in the prairie Northwest we must admit we have only summer and fall varieties, but no real winter apples that will keep into spring in an ordinary cellar. I believe that the future ideal winter apple will result from a totally new combination of unit characters.

In the cuts the shriveled skin should be disregarded, as the apples were kept too long in a warm room before photographing.

Kola Crab

Offered for the first time spring 1922. A hybrid of the wild native crab apple from Elk River, Minnesota, with pollen of Duchess of Oldenburg apple. The fruit is flat, green, full two inches in diameter on the original tree fruiting in greatly crowded nursery rows of seedlings. The skin is oily as in the wild crab. The fruit cooks up into an acceptable sauce. Trees have strong forks and appear immune to blight and winter killing. Kola is the Sioux Indian name for "friend." The heaviest specimen of Kola in 1919 weighed three ounces; the largest was two and one-half inches in diameter. This was the first year of fruiting.

Price of trees, one year buds on seedlings of Yellow Siberian Crab, each 75 cents.

Tipi Crab

Offered for the first time spring 1922. Also a hybrid of the wild crab of Elk River, Minnesota, with pollen of the Duchess of Oldenburg apple and much the same in tree and fruit as Kola. Tipi is the Teton Indian for "tent."

Price of trees, one year buds on seedlings of Dolgo crab, each 75 cents.

Shoko Crab

Offered for the first time spring 1922. A hybrid of the wild crab of Elk River, Minnesota, with pollen of Alexander apple, one of the largest Russian apples. Fruit nearly two inches in diameter, green, acid, but cooking into an acceptable sauce. The size of the fruit will probably increase, as the original tree is much crowded in nursery rows. Shoko is the Sioux Indian for "seven."

Price of trees, strong one year buds on seedlings of Alberta Crab (a Siberian crab hybrid), each 75 cents.

Zapta Crab

Offered for the first time spring 1922. A hybrid of the wild native crab apple from Elk River, Minnesota, with pollen of the Bismarck apple, a large variety from New Zealand resembling the Alexander. Fruit two and one-eighth inches in diameter, green, acid and acerb, but cooks up well into sauce. The original tree is closely crowded in our seedling nursery so the size of the fruit will probably increase under propagation. Zapta is the Sioux Indian for "five."

Price of trees, strong one year buds on *Pyrus baccata* stock, each 75 cents.

Goldo Apple

Offered for the first time in spring of 1922. A seedling of Grimes Golden top grafted on Dutchess of Oldenburg apple. The name is condensed from these two varieties. Goldo is distinguished by the smooth, hardy, vigorous growth of the original tree. The fruit is much like Grimes Golden in general appearance and excellent flavor. If the trees prove hardy under propagation it will be a decided acquisition as a variety combining the hardness of Duchess with the size and high quality of Grimes Golden.

Price, one year buds on *Pyrus Ringo* Crab seedling stock, each \$1.00.

Sasha Apple

Offered for the first time spring 1919. A seedling of the Hibernal pollinated with Gravenstein pollen. The fruit is a fine yellow oblate and excellent quality sweet apple of full commercial size; the tree is of strong, stocky growth, has blighted a little but not more than some of the standard varieties. The pedigree indicates it should combine hardness and quality. Sasha is a Russian man's name.

Trees, one year buds on seedlings of Amur Crab, each 50 cents.

Chance Apple

Offered for the first time spring 1919. The original tree bore a good crop again in 1919. One of our chance seedlings from mixed seed of northern grown apples. Original tree productive. Fruit oblate, regular, of full commercial size, red-striped all over with attractive blue bloom. Flesh white, pleasant subacid. Season probably January or later. I hope this will help on the late-keeping apple problem. The fruit is certainly of attractive appearance.

Trees: One year buds on Yellow Siberian seedling crab stock, each 50 cents.

Olga Crab

Offered for the first time spring 1919. Pedigree: Female parent, Duchess of Oldenburg apple. Male parent, *Pyrus baccata cerasifera*, which is much like the old Cherry crab. This combines the Russian apple with the Siberian crab. Fruit is regular, oblate, fully 1½-inch in diameter on the original seedling tree. Color solid bright cherry red all over with blue bloom; dots distinct, white, many large; basin quite shallow, smooth; cavity wide, obtuse with considerable russet. Calyx mostly deciduous. Flesh is yellowish white, crisp, juicy, acid, of good quality. Flesh is yellow with red core outline. Very good to eat raw as it mellows. The fruit cooks up very quickly, as easily as the Duchess apple itself, and the sauce is of an attractive deep salmon red. Under propagation the trees may slightly increase in size of fruit. The tree is a vigorous stocky grower with strong forks and extremely productive.

Trees, one year buds on seedlings of Red Siberian and Dolgo crab, each 75 cents.

Dolgo Crab: A New Red-Jellied Siberian Crab

At the annual exhibits of this Department at the South Dakota State Fair many have asked about the remarkably long, conical, intensely bright red crabs we used in making letters. This is one I brought over from my second trip to Russia in 1897. A vigorous productive tree and so far free from blight. Fruit full of juice, jells easily, makes a rich ruby red jelly of beautiful color and excellent flavor.

The one year old trees in nursery are of strong growth with wide spreading forks and strongly shouldered limbs, indicating that they will not split down easily.

Trees, one year buds on seedlings of Alexis, a Siberian crab apple, each 75 cents.

Caramel Apple

Offered for the first time spring 1919. One of our seedlings from mixed seed of choice standard Northern apples. Fully medium size, two and three-fourths inches in diameter. Late yellow mostly covered with red stripes. Evidently of the Fameuse type. Flesh snow white, sweet, excellent. Of promise as a winter sweet apple of highest quality, but probably should go south rather than north. The name Caramel is given to it because it is a sweet apple.

Trees, one year buds on seedlings of Amur Crab, each 75 cents.

Hopa Red-Flower Crab

Offered for the first time spring 1920. Hopa is the Sioux Indian word for "beautiful." A promising addition to our list of ornamental trees for the lawn owing to its wealth of beautiful deep rose crimson blossoms. A striking sight when in bloom. The fruit is too small to be of value for eating, being less than one inch in diameter, but its bright red color will light up the tree in autumn, and the small size is an advantage as the tree is less apt to be stripped for fruit when standing on the lawn. Female parent Pyrus Malus Niedzwetzkyana, a small red-fleshed apple from Turkestan in the high mountains between Turkestan and China, male parent Pyrus Baccata. This was not a hard cross, but I am satisfied that the Baccata was the pollen parent. Trees of strong growth in nursery.

Price of trees: One year buds on seedlings of Pioneer Crab, (a hybrid Siberian Crab) and on seedlings of Dolgo Crab, each \$1.00.

Mercer Wild Crab

Found growing wild near Sherrard, Mercer County, Illinois, by the late N. K. Fluke of Davenport, Iowa. Fruit yellow, oblate, and up to two and five-eighths inches in diameter. Weight three ounces. This tree has been especially productive here at this station when topgrafted on Hibernial apple. Flavor acid and acerb, so it is useful mainly for jelly or for adding a quince-like flavor to apple sauce. The tree is really beautiful when in bloom.

A few trees, one year buds on seedlings of Alexis crab, each \$1.00.

The Hansen Hybrid Plums

Originated in this Department, they are now represented by far more than a million trees in western orchards and nurseries. They are rapidly finding favor in many other states. My sand cherry hybrids, such as Opata, Sapa, Sansoto, Cheresoto, and Wachampa should be kept in bush form with many stems close to the ground. As they bear heavily one year old wood, try to have an abundance of this wood coming on by pruning back the shoots that have borne several years. The sand cherry hybrids should not be trimmed up with a high stem as some practice with ordinary plums.

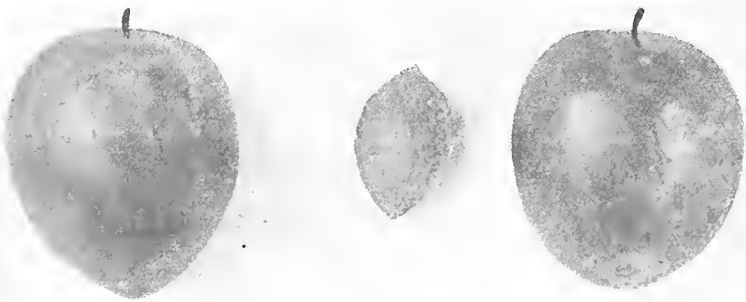
Waneta Plum

WANETA. This is the largest of all the Hansen Hybrid Plums. It is a 2-inch, 2-ounce plum, and of very strong growth in nursery. An early heavy and persistent annual bearer of delicious plums of immense size. It is a cross of the America, a large Japanese plum, with pollen of the Terry, the largest native plum. The Waneta combines in large measure the most desirable points of the native and the Japanese plums. In a visit to the 1920 Iowa State Fair at Des Moines, I noticed that Waneta and the sister variety Kahinta, were by far the largest plums on exhibition.

For spring we have some trees of Waneta, one year buds on native plum roots, each \$1.00.

Of my other new hybrid plums we have a fine assortment this year. Many of these in small lots only because we are budding a set for our new plum orchard. The varieties available this year are Opata, Sapa, Tokata, Hanska, and Kaga. Of my pure native plums, Wastesa, Yuteca, South Dakota No. 38 and 69.

Price of trees, one year buds on native plum stocks, customer's selection, each \$1.00. Our selection, \$8.00 per dozen.



Ojibwa Plum

Offered for the first time spring 1917. Pedigree: Shiro X Manitoba wild plum (Prunus nigra) pollen. Since the Shiro, one of Luther Burbank's plums, is a complex hybrid of four species, the Ojibwa will be a mixture of five different species of Prunus: Nigra, Angustifolia, Cerasifera, Triflora, Simoni. Flesh yellow, of good flavor; skin thin and free from acidity. In my opinion this tree is especially worthy of a trial at the North. The Ojibwa is not nearly as large as the Waneta but should go considerably farther north. The original tree has been very productive. At first sight the pointed shape would make it look like a select pure native Manitoba plum, but the skin is too thin to be a pure Manitoba.

Price of trees, one year buds on native American plum roots, each \$1.00.

F. L. Skinner, Dropmore, Manitoba, Canada, writes under date of January 19, 1922: "I had a splendid crop from your Ojibwa plum this year."

Tom Thumb Cherry

The following is from our 1916 springlist:

"The first step in my project of breeding plums true to seed to avoid the necessity of budding and grafting. T. T. Seed No. 1 is a seedling of Opata. T. T. Seed No. 2 is a seedling of Ezpatan which is of the same pedigree as Sapa. I am not sure this plan will be desirable as the trees would need to be isolated when in bloom, either by tenting the trees or by planting them far from other trees. Some of them will no doubt revert, others will come true. To complete this work, seedlings should be raised and only those saved that come true."

The following is from our 1921 spring list:

"We have not sent out trees of this series since, but have a few trees for spring of True to Seed No. 2. I have watched this seedling closely the past five years. It is practically a Sapa in fruit, but the plant is a low bush, having much the same habit as its granddam, the native Sand Cherry. Bears freely on one year shoots in nursery, from the ground up, and annually thereafter. But probably the plant should be propagated by layers to save the expense or budding. What has been done in this seedling is really to reduce the choice black-purple flesh plum-sand cherry hybrid to the stature of a small fruit. They can be planted close together like currant bushes. What more can be done, the future must disclose."

In the spring of 1922 I named T. T. Seed No. 2 the Tom Thumb Cherry. Plants, one year old buds on native plum roots, each 50 cents.

Champa Sand Cherry

A Bushy Tree, Both Useful and Ornamental.

Introduced spring 1912. A seedling of the Sioux, one of our pure Sand Cherry seedlings. The Champa exceeds the Sioux somewhat in size and appears to be the largest Sand Cherry to date. Color, glossy black; pit, small, long, rather than round. This has proven productive in many places. It makes a low bushy tree. I consider this of value for ornamental planting, owing to the great abundance of flowers in spring. The flowers are white with pink tinge.

Price, one year buds on native plum stock, 50 cents each; \$5.00 per dozen.

Purple Leaf Sand Cherries

An event for landscape gardeners. By crossing the Dakota Sand cherry with pollen of the Purple Leaved plum of Persia, (Prunus Pissardi)' we have a number of beautiful shrubs following the sand cherry in stature and glossiness of leaf, but with the rich purple-red color of foliage which gives the Persian sire such wide popularity. In the spring of 1909, three of these seedlings were first introduced as Purple A, Purple B, and Purple C. Last year Purple A was named Cistena (Sioux Indian name for "baby").

Further experience shows that Purple B is also worthy of a name since the color is as bright and the growth equal if not superior. In 1911 Purple B was named Stanapa, which is made up from two Sioux Indian words meaning "purple leaf." In my opinion these purple-leaved sand cherries will win great favor for single specimens or groups on the lawn or for dwarf ornamental hedges, owing to their brilliant coloring. Stanapa is much the stronger in growth and also hardier here at Brookings.

Price of Stanapa and Cistena, one year buds on native plum stock, each 50 cents.

Native Plum Pits and Seedlings

We are often asked for pits of native plum seedlings from which to grow stocks to use for budding and grafting. We can spare some native plum pits (cleaned now and stratified for freezing in sand), at the rate of 1 pint for \$1.00. Native plum seedlings, one year old, \$5.00 per 100.

Sand Cherry Seedlings

Western Sand Cherry, Prunus Sesseyi. A native of the highest and driest lands west of the Missouri river in this state. A dwarf bush fruit much favored by the Sioux Indians. These plants are seedlings of our third and later generations under cultivation at the South Dakota Experiment Station, hence many of the bushes bear fruit of extra size and fruit of all the seedlings is good enough for sauce.

Price, 4 one year seedlings for \$1.00.

Tetonkaha Rose

Offered for the first time in the spring of 1912. A seedling of the wild prairie rose from Lake Tetonkaha, about eighteen miles northwest of this station, crossed with the pollen of the Siberian Rose rugosa, so that it is a combination of at least three species. In the 100 seedlings obtained from the cross, 74 were double and 26 single; all deep pink and fragrant. The stock offered consists of root sprouts from these 26 original double flowered seedlings. The flowers are fully 3 inches in diameter; the bush is perfectly hardy, flowering abundantly in June; about 18 to 25 petals, deep rich pink; very fragrant; appears desirable for dwarf hedges or as an ornamental shrub. The habit is more upright and the flowers are less concealed by the foliage than in the pure Rosa rugosa. This Tetonkaha rose proves absolutely hardy and very desirable in many places even far north into Manitoba without winter protection. It is a very free bloomer. Plants of strong growth and as they sprout freely it should not be necessary to propagate on tender commercial stocks or from cuttings.

Strong transplanted plants, each 75 cents. If sent by parcel post, smaller plants will be sent.

Rosa Rugosa, Siberian Form

The well known beautiful hardy rose with dark crimson single flowers up to four inches in diameter. Attractive ornamental in autumn and early winter with large bright red fruits, which are used, with seeds removed, for food in its native home. Our own importation, descended from the original introduction from Siberia by the Imperial Botanical Gardens, at Petrograd, Russia. The Siberian form of this species is superior to the Japanese form.

Large plants, several years old, each 75 cents.

Roses for Mass Planting in Parks

In the work of crossing the wild roses of Siberia and the prairie Northwest with the choicest cultivated varieties thousands of seedlings have been grown from which I have selected the best with double or semi-double flowers for further work. The remainder are strong bushes, nearly all from three to six feet in height, with fragrant single red or pink flowers. They will be valuable for mass planting in parks.

Price \$5.00 per dozen. For larger lots write for prices. They be dug only as ordered.

Siberian Almond

Amygdalus nana L. All visitors to the college grounds in early spring are attracted by the remarkable color display of this beautiful shrub, which should be planted in every garden in the Northwest and far north into Canada. A dwarf ornamental with abundant, bright rose pink flowers, the very first of all shrubs to bloom in the spring. Good in front of other shrubs on the lawn. Grown from our importations from the dry steppes of the Semipalatinsk region of Siberia.

Strong transplanted plants, each 75 cents.

Tartarian Maple

Acer tataricum. Really a good dwarf round-topped Maple tree that has proven hardy many years at this station. A desirable lawn tree.

Small transplanted plants, grown from seed from our own importation, each 50 cents.

May Day Tree

This bird cherry from Eastern Siberia is worthy of a place on every lawn in the prairie Northwest. It is remarkable for being the first tree to come into full leaf here on the College grounds. The large green leaves and wealth of white blossoms early in the spring make the tree decidedly ornamental. In fruit the tree is no special improvement over our own native choke cherry, but is decidedly superior in habit because it does not send up sprouts or suckers. These seedlings are descended from the stock originally imported from Russia by Professor J. L. Budd.

Price, small transplanted trees, each 50 cents.

I am using these seedlings as a budding stock for the Boughen Manitoba Sweet Choke Cherry because of its vigorous growth and freedom from suckers.

Semipalatinsk Bush Honeysuckle

Offered for the first time spring 1921. In 1913 on the dry steppes at Semipalatinsk, Siberia, I found a choice Bush Honeysuckle of tall growth with yellow or red berries. This will be hardy far north. Good for hedges, screens, or as single specimens.

Price, small stocky transplanted plants, each 50 cents; large, bushy plants, 3 to 5 feet, each 75 cents.

Honeysuckle Hedges

From seed of our large imported collection of Honeysuckles, especially select varieties of the Tartarian Bush Honeysuckles. We have grown some nice stocky plants. They will vary somewhat in color of blossom and will be desirable for hedges, screens and single specimens on the lawn. Perfectly hardy far north.

Transplanted plants, 3 for \$1.00. Price of large lots on application.

Manitoba Hazelnut

Ornamental as well as useful. The need is apparent of a nut bearing shrub for the open prairie. We now have the wild native hazel nut of Manitoba in the third generation under cultivation. Visitors to the college grounds have been pleased with the heavy bearing of these hazel hedges. The plants vary greatly in size of fruit and in time will no doubt approximate that of the filberts of England and France.

Small transplanted plants, each 50 cents.

Siberian Buckthorn

Brought by N. E. Hansen in 1913 from the dry steppe Semipalatinsk region of Siberia. The plant is harder than the common Buckthorn; the foliage is of a brighter green and appears earlier. The Siberian Buckthorn will I believe supercede the common Buckthorn as soon as it can be propagated in quantity. The glowing green foliage and neat habit makes this a very attractive ornamental shrub for the lawn, either for hedges or as single specimens. Flowers small, white; berries black. Botanical name undetermined.

A few two year transplanted plants can be spared at 50 cents each.

A Sweet Choke Cherry

W. J. Boughen, Valley River, Manitoba, found a tree of the native choke cherry on his farm with fruit so much milder in flavor than usual that it may fairly be called a sweet or chokeless choke cherry. Offered for the first time. Mr. Boughen has the first right to name this fruit so we will await developments.

A few one year buds on May Day tree seedlings, each \$1.00.

A New Siberian Basket Willow

Offered for the first time spring 1921. In the fall of 1913 in the dry steppe region of Semipalatinsk, Siberia, I walked along a small creek which had almost dried up. Stumbling I seized hold of a willow and found that the branches simply would not break. So I brought home a few cuttings. You may tie bow knots in these pliable shoots, but it appears practically impossible to break them. They ought to be good as a tie willow for nursery work or for basketry.

A few cuttings, 10 for \$1.00.

Russian Silver-Leaved Willow

Offered for the first time spring 1921. Some years ago I brought from Russia a silver-leaved willow under the name *Salix regalis*. The botanical status of this tree according to Bailey, appears to be *Salix alba*, var. *splendens* or *Salix alba*, var. *argentea*, hence a form of the white willow.

These trees have made a strong growth, are perfectly hardy, and are noteworthy for the silvery foliage. A rich silver satin on both sides.

A few cuttings can be spared at 5 for \$1.00.

Caragana

Caragana arborescens, also called the Siberian pea tree, is the best plant for hedges, low wind-breaks and snow-catchers for the entire prairie Northwest, extending far north into Canada. In 1897, as Agricultural Explorer for the United States Department of Agriculture, Washington, D. C., I imported about 350 pounds of *Caragana* seed from Russia. This was not the first importation but perhaps the largest ever made. At any rate this seed served a good purpose in introducing the plant very extensively.

We have some seedlings and transplanted plants descended from this importation. Prices upon application.

Hansen Siberian White Sweet Clover

Melilotus alba raised from seed found growing wild on the dry steppes of Semipalatinsk, Siberia, in 1913, by Prof. N. E. Hansen. *Melilotus alba* is the common white sweet clover which is native in Europe, North Africa and middle Asia. In Europe it is found as far north as latitude 15 degrees, 16 seconds in Norway. As found under cultivation, the exact origin of common Sweet Clover is not known. It will be of interest to ascertain the comparative value of this strain of the plant from this 8-inch rainfall climate. At the University of Saskatchewan, Saskatoon, Saskatchewan, Canada, this Siberian Sweet Clover has been found to be of great promise as the hardiest, earliest, and best of all the strains of White Sweet Clover. It may have a great bearing on the problem of adding humus to summer fallowed land. The name Arctic Sweet Clover has been suggested for this strain, but the name Hansen Siberian White Sweet Clover should be retained as it has priority and the plant is not really arctic in its range.

Price of Hansen White Sweet Clover seed, per packet, 50 cents.

Semipalatinsk Alfalfa

Described in Bulletins 141 and 167. From the dry steppes of Semipalatinsk, Siberia. Some of the farmers who have had excellent results with this alfalfa on the driest uplands of the west now abbreviate this word to Semi. A variety of great vigor and especially adapted to transplanting into cultivated rows. It is not at its best the first season as it first makes its remarkable root system. It does its own subsoiling on hardpan. Flowers yellow. I find this to be the strongest in growth of all the varieties of *Medicago falcata*.

This variety shells its seed through a long season, which is Nature's way of securing a stand in its native country with only eight inches total annual rainfall. To improve the seeding habit from the standpoint of raising seed, let the plants stand uncut and select seed from the plants that hold their seed the longest. Some will hold the seed until frost.

Price per small packet, 50 cents.



Cossack Alfalfa, one plant, dried weight eight younds. Grown on upland without irrigation at Wall, western South Dakota, and exhibited at the South Dakota State Fair at Huron, 1915. Plant held by Prof. N. E. Hansen.

Cossack Alfalfa Seed

Cossack Alfalfa. Introduced from Russia and named by N. E. Hansen. This has the world's record of increasing from a spoonful of seed in 1906 to a thousand bushels of seed in 1916. Now much more. The acreage of Cossack Alfalfa is rapidly increasing because it is extremely hardy and very productive both of forage and seed. For spring I have only a few pounds of Cossack seed, grown in 1921 on our old plot here on the Station grounds, available for special experiments. Price of Cossack alfalfa seed per small packet, 50 cents.

Hansen White Siberian Proso

A large grain millet from Semipalatinsk, Siberia. Good for table food and for all kinds of live stock. Their surest crop in an 8-inch annual rainfall climate in Siberia. For table recipes, see Bulletin 158 of this Station. Two pounds of seed, specially selected for large seed, sent prepaid by parcel post, 50 cents.

Gladiolus

The best summer bulb for the garden. At the 1921 State Fair at Huron, this Department exhibited over 2,000 spikes in 150 choice named varieties. In 1922 the assortment included over 500 varieties and the entire wing of the Horticulture Building at the State Fair at Huron was transformed in "The Fairyland of Flowers." These bulbs are not for sale, but 12 assorted bulbs will be given as a free premium with one annual membership in the South Dakota State Horticultural Society.

Special Offer--Double Value For Your Money

The Legislature has made this Society the Department of Horticulture for South Dakota and has fixed the price of annual membership at \$1.00. The reports are published by the state, but aside from the State Official List, the report is sent only to members. This provides a fund to help pay the running expenses of the Society.

The Society wishes to increase its membership.

As a free premium, select One Dollar's worth of seeds, plants or trees from the foregoing list. The order must be received before April 15, 1923. As the supply of some of these premiums is very limited mark your second choice. One of the annual reports will be sent you at once. One book and one free premium amounting to One Dollar, will be sent postpaid for each \$1.00 received. Here is a good chance to get a valuable library of books on South Dakota trees, fruit and gardening, as well as some choice new fruits for the garden.

After April 15, 1923, the only premium available will be one of the old annual reports. This will be sent without further notice. There will be no duplication, because our card index record shows just what reports have been sent out to everyone who has ever been a member of the Society.

Special Life Membership Offer

Until April 15, 1923

The life membership is fixed by the Legislature at Ten Dollars. It is highly desirable that the Society has more life members as they are our permanent source of strength and influence. Residents of South Dakota who become life members may select Ten Dollars' worth of trees, plants, seeds or other premiums from this circular as a free premium. This includes a set of 18 annual reports now issued, as far as available, and one annual report as issued. All premiums sent by express at customer's expense. Address, N. E. HANSEN, Secretary, Brookings, South Dakota.

Book Premiums

In place of seed and plant premiums, the following are offered. Select ONE of the following list for each annual membership.

No. 1—One back volume of the Annual Report of this Society.

No. 2—Vegetable Gardening, 246 pages, paper cover, by the late Prof. S. B. Green, University of Minnesota.

No. 3—Popular Fruit Growing, 323 pages, paper cover, by Prof. S. B. Green, University of Minnesota.

No. 4—Evergreens, "How I Grow Them," 95 pages, paper cover, by C. S. Harrison, and "Windbreaks and Shelter Belts," 69 pages, paper cover, by Prof. S. B. Green, University of Minnesota.

TERMS

Terms—Cash with order. Positively no credit given, except to Government Experiment Stations. Stock is shipped by express carefully packed in moss. No orders booked until paid for. No plants sold in less than the quantities specified. Address, N. E. HANSEN, Experiment Station, Brookings, South Dakota.

Extracts from Letter to the South Dakota State Budget Board from the South Dakota State Horticultural Society

The headquarters of the South Dakota State Horticultural Society are at the South Dakota State College. For many years the Society has been getting along with an annual appropriation of \$1000. The increase in population and the rising price level makes it very necessary to increase this appropriation. So we are asking an increase to \$1500 annually.

The Society is greatly interested in experimental horticulture in South Dakota, because it is absolutely necessary to real progress.

When I first came to South Dakota in the fall of 1895, the need of a hardier list of orchard and small fruits was very evident. Hence, during the past twenty-seven years, the originating of new fruits has been the special work of this department. Hundreds of thousands of seedlings have been grown. A few of these have attained an honored place on the fruit list in various states. The "Hansen Hybrid" plums are now represented by over one million trees in the orchards of the West, and some say that fully nine-tenths of the plums now sold in the Northwest are the Hansen Hybrid plums. Originating a new fruit corresponds to a new invention in the mechanical industries. This work was started in the special Fruit-breeding greenhouse given to the State College by the State Legislature.

We have now come to where more land is necessary to prevent disaster to the thousands of new seedlings now planted too closely for their proper development. The State of South Dakota should have the largest fruit-breeding farm in the world, because it is necessary to complete the work already planned and to provide for future growth. Such a farm would insure the rapid development of an entirely hardy list of fruits for the prairie Northwest. Will you help realize this, my hope?

The South Dakota State Horticultural Society is back of this proposition and makes the following recommendations:

LAND

South Dakota State College should have the largest fruit-breeding station in the world. It is necessary because of the work already under way. My ambition is to have the work put on a permanent basis so it will go on for generations. Aside from the great intrinsic value of the work, the advertising value to the state will be worth much more than it costs. The total amount of land should be fully one thousand acres. The heart of the work should be at the South Dakota State College, where the work of crossing under glass is conducted and all the foundation stock gathered from Northern Europe, Siberia, Canada, the Dakotas and all over the prairie Northwest, is now growing. This is a unique collection. This foundation material is essential. I have made eight trips to Canada in the past four years gathering more material as far north as possible, in order to get an excess of hardiness and earliness to work upon with the various fruits. A section of school land as near the State Capitol at Pierre as possible should be set aside to be used as an upland station where the work with the South Dakota Sand Cherry and other fruits that favor the uplands can best be conducted. This upland station will also give opportunity for the work with some of the forage plants which I obtained in Siberia, especially the alfalfas, of which recently over eighty pounds of seed was raised at Rampart, Alaska, sixty-five miles this side of the Arctic Circle when all other winter killed. Some special selection work is needed with these new alfalfas. South Dakota should be the center of hardy alfalfa seed production and the center of this new development work for all the prairie Northwest from here to the Arctic Circle. This would also afford opportunity for Director James W. Wilson to continue on an adequate scale the great work he is doing with the Siberian Fat-rumped Sheep, which I brought from Siberia in 1913, and which will be worth many millions of dollars to South Dakota.

STATE ORCHARDS

In addition to this upland station at Pierre, we need a series of state orchards located as near to some of the largest cities as possible, so that plenty of help will be available at times when needed. Allowing for the difference in climate, my first thought of this would be Sioux Falls, Watertown, Rapid City, Yankton and Aberdeen. Also more land at Brookings is absolutely necessary. Smaller orchards could be located elsewhere on a co-operative rental basis. I am confident that other cities and towns would be willing to give 40 acres for such purpose, providing the State would do the rest. In addition to this there should be a model fruit and ornamental plantation on the State Fair Grounds at Huron. In this way we would quickly learn the comparative value of any new variety for the various parts of the State. South Dakota is such a large state that several stations are absolutely needed. These state orchards would need one resident superintendent to keep the seedlings clean and to give them good cultivation; the selection and crossing work to be done by myself and assistants. The plan would include:

1. To test all the standard varieties.
2. To demonstrate the best systems of orchard management.
3. To test out many thousands of new seedlings which I am originating every year.
4. To establish stock orchards, especially for the Siberian wild blight-proof pears and wild apples, to grow hardy seedlings upon which to bud the new hybrids coming on.

This will be a permanent proposition. There will be some income from the sale of the seedlings to nurserymen, also from the sale of fruit. * * * * *

MONEY AND BUILDINGS

The progress of this work will depend upon the amount of money given us. I would suggest \$25,000 per year, or as much thereof as possible, also the income from the annual crop of fruit, seed and seedlings from these stations to help in the work. A small amount of this money should be available for a small station of a few acres in some far southern state where a lot of special varieties could be grown to furnish an abundance of pollen needed. This could be done economically on a rental basis. Similar provision should also be made for a few acres on a rental basis in some far northern locality, so as to extend the blooming season and thus save many years of work. Many thousands more of blossoms could be worked each year.

We need a cellar and cold storage building with fruit-breeding greenhouse and fruit laboratory in connection. About \$20,000.00 would give us this necessary equipment. This would be at the State College. However, as soon as possible a similar building should be erected at other places, say at Sioux Falls, as it would afford steadier employment during the year for the labor needed and very greatly hasten the work. * * * * *

At these different state orchards special field days would be held annually. I would expect many thousands of visitors during the year at these meetings. They will believe an orchard in full bearing, much more than they will believe a bulletin. Seeing is believing.

You may say money is scarce, and yet England and France, in spite of great financial stress, have increased their budgets for agricultural research. This is because it pays. Agricultural research adds to the national wealth.

N. E. HANSEN, Secretary